CALCASEIU RIVER AND PASS DREDGED MATERIAL SEDIMENTATION STUDY

OBJECTIVES

- Develop short-term dredging plan for the next 1 to 3 years for the placement of dredged material.

- Development of long-term dredging plan for the maintenance of the project area and long-term use of the CDFs.

STUDY AREA

- Calcasieu River and Pass, Louisiana
- Specific area of study within the river and pass is the reach from river mile 5.0 to 34.0
- 4 million yards of sediment is dredged from sub-reaches of this area on an annual basis
- Mile 5 to 14 and Mile 14 to 28 are dredged on alternating years and Mile 28 to 34 is dredged once every 5 years

SEDIMENT MANAGEMENT PLAN

- Maximize volumetric disposal capacity
- Dewater and densify fine-grain material to the greatest extent feasible
- Reclaim and remove usable material for productive use and/or beneficially use dredged material
- Maintain acceptable water quality of the discharged effluent (401 Water Quality Certification)

OUTLINE FOR SHORT-TERM MANAGEMENT PLAN

- Determine capacities of selected existing CDFs
- Run settling column test and consolidation tests on a representative sample(s) and input data into the SETTLE model (and PSDDF if needed) to determine short term CDF volume requirements
- Establish a plan to develop critical CDF volume

LONG-TERM MANAGEMENT PLAN

- Determine present diked surface areas and present fill surface elevations for each existing CDF
- Establish projected dredging volume by reach or channel mile (from analysis of dredging history)
- Determine geotechnical conditions of the subsurface along the present dike alignments of each existing CDF and analyze each disposal area to determine maximum dike height that could be constructed

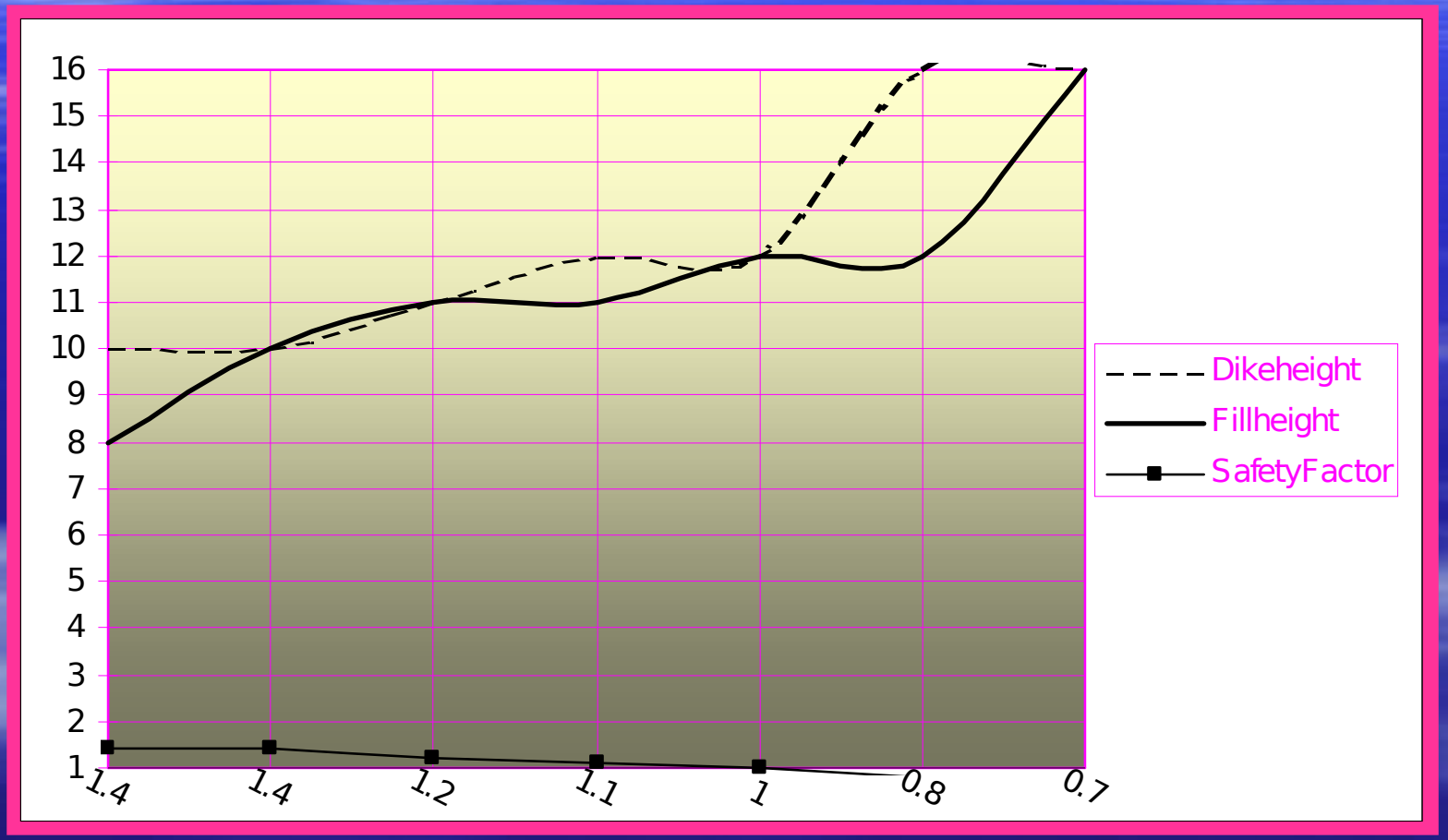
LONG-TERM MANAGEMENT PLAN (CONT'D)

- NOD Geotechnical branch will establish historical sediment characterization data (grain size, Atterberg Limits, in-situ water contents, and sediment chemistry from analysis of available historical sampling which includes volume of sediment as well as in-situ properties, and may require sampling for characterization to fill data gaps) and forward this information to EL

LONG-TERM MANAGEMENT PLAN (CONT'D)

- Establish constraints on site use during filling to include: minimum ponding debths and areas for effluent quality/maximum expected dredge sizes/limits on pumping distances, etc.
- Project fill rates for a range of placement scenarios to determine optimum sequencing
- Evaluate beneficial use options, project capacities, and schedule

SAFE DIKE HIEGHT



REQUIREMENTS

- The total volume of material to be dredged from the Calcasieu River and Pass in the short term is 15,000,000 yd^3.
- The upper reach has a total of 6.5MCY, the middle reach has a total of 4.5 MCY,and the lower reach has a total of 4.0 MCY.
- Depending on the size dredge used for the removal of the material, 27 or 30 inch, the upper reach requires a storage volume of 7.5 to 7.75 MCY.

REQUIREMENTS (CONT'D)

- The middle reach requires a storage area between 4.5 and 9.8 MCY.
- The lower reach requires a storage volume of between 4.0 and 9.0 MCY.
- The total area needed for storage between miles 5 and 36 is between 16.0 and 26.5 MCY

CAPACITIES

- Three fill elevations were used to determine the present storage capacities of the CDFs along the Calcasieu River.
- The 10-foot fill elevation has a storage capacity of approximately 5.6 MCY,
- The 12-foot fill elevation has a storage capacity of approximately 6.8 MCY, and
- The 14-foot fill elevation has a storage capacity of approximately 7.6 MCY